

according to him accompany even uncomplicated cases as tending to break down the protective barriers of a dormant tuberculous lesion. He points out that this tendency is much more marked in the instance of influenza and influenzal pneumonias than it is in ordinary lobar and bronchopneumonias. A second factor is that of lowered resistance, based on the negative von Pirquet reaction found during and for some weeks after influenza, a condition likewise obtaining in measles. The author does not mention the possibility of increased susceptibility to primary infection as a factor in postinfluenzal tuberculosis.

Agglutination in Influenza.—UTTIEIM (*Jour. Infect. Dis.*, 1920, xxvii, 460) studied the sera of patients with influenza as to whether the serum of the patient would agglutinate the influenza bacillus obtained from the same patient and whether agglutination would take place with heterologous strains. The antigen consisted of cultures isolated from the nose or throat and suspended in salt solution. After thorough shaking, a homogeneous emulsion was usually obtained, spontaneous clumping occurring in only one instance. Thirty strains were isolated from as many patients and tested with the serum from these patients during different stages of the disease. It was found that 11 gave a positive agglutination with their own bacilli, 6 in a dilution of 1 in 160, 4 in 1 in 60, and 1 in 1 in 20. With the exception of one strain, which gave an agglutination of 1 in 40 with 3 sera of other patients, no cross agglutination was encountered in any serum tested. The blood of 9 patients was examined during different stages of the disease; 8 showed a constantly negative result, while in 1 instance the agglutination became positive in a dilution of 1 in 80 in the convalescent stage. Three strains were isolated from the throat of 1 patient, only 1 of which gave agglutination with the patient's serum. Seven of the 11 which gave agglutination with the homologous strain occurred in uncomplicated influenza and 4 in influenza pneumonia. Of the remaining 19 negative cases, 10 had pneumonia.

THERAPEUTICS

UNDER THE CHARGE OF

SAMUEL W. LAMBERT, M.D.,

NEW YORK,

AND

CHARLES C. LIEB, M.D.,

ASSISTANT PROFESSOR OF PHARMACOLOGY, COLOMBIA UNIVERSITY.

The Use of a High Fat Diet in the Treatment of Diabetes Mellitus. Second Paper: Blood Sugar.—NEWBURGH and MARSH (*Arch. Int. Med.*, 1921, xxvii, 699) supplement a previous communication (*Arch. Int. Med.*, 1920, xxvi, 625) in which they reported briefly the

results of an investigation of the effects of a diet whose energy came largely from fat, to which was added sufficient protein to maintain nitrogen balance, and the minimal carbohydrate necessitated in making up a diet that a human being can eat over a long period of time. It was shown that with such a diet glycosuria was avoided in severe diabetes and that acidosis was not produced. The present paper presents the blood-sugar determinations in 45 cases treated by this method. All but 5 more or less promptly responded with a reduction of the blood sugar to within normal limits. Of the 5 which did not reach a desirably low percentage 2 were suffering from severe complicating diseases and 1 was suspected of not adhering to his diet.

Dermatitis and Allied Reactions Following the Arsenical Treatment of Syphilis.—A detailed review is given by MOORE and KEIDEL (*Arch. Int. Med.*, 1921, xxvii, 716) of 23 cases of dermatitis and allied reactions following arsenical treatment which have occurred during the last six years in the syphilis department and in the wards of the Johns Hopkins Hospital and in the private practice of the authors. Five of the 23 cases terminated fatally. From the evidence presented it appears that the lesions of syphilis and the duration of the disease exercise no modifying influence upon the dermatitis. Dosage, technic of administration, impurities in the drug and the type of chemotherapeutic arsenic compound can be excluded as etiological factors. Reactions of this group tend to appear early in the course of treatment. The lesions may be classified, on the basis of the constitutional manifestations and their importance, as mild or severe. In the mild group fall urticaria and erythematous and herpetic rashes. In the severe group are macular, maculo-papular and exfoliative rashes, itching and stomatitis. In some cases certain prodromal symptoms may be recognized; itching, mild or fleeting skin eruptions, prolonged fever or marked malaise. The occurrence of any of these during the use of arsenical products should lead to a suspension of treatment and a general survey of the patient. Urticaria is fairly common in association with the nitritoid crisis, is not accompanied by the more severe constitutional manifestations and does not contraindicate continuance of arsenical treatment. The authors call attention to characteristic alterations in the blood picture, which were present in 14 of the 16 cases studied. The changes consist, in general, of leukopenia, decrease in polymorphonuclear neutrophils, eosinophilia, increase of the large mononuclear-transitional group and the appearance of many fragile cells. The complications of dermatitis exfoliativa, including acute nephritis, polyneuritis, jaundice, skin infection, bronchopneumonia and septicemia, are discussed. In considering the possible etiological factors in reactions of this group the authors cite Auer's recent work and agree that arsphenamine may lower the local threshold for an unknown antigen which in its turn causes an anaphylactic reaction, and thus may cause the deposit of arsenic in the structures where its toxic action is observed, notably in the bone-marrow and in the skin.

Fatal Chronic Nephritis in a Fourteen-year-old Girl with only One Kidney and a History of Scarlet Fever.—PEPPEN and LUCKE (*Arch. Int. Med.*, 1921, xxvi, 661) report a careful clinicopathological study

of a fatal case of renal disease in a fourteen-year-old girl. She had pneumonia at the age of two, typhoid fever at the age of three, and mumps at the age of four. At the age of seven she suffered from an attack of scarlet fever, after which she was never strong. There was no history of kidney involvement or edema. She had occasional attacks of belching and vomiting, which were more severe during the past two months. Two months before admission she had an attack of marked blurring of vision and loss of power and sensation in her left arm and both legs, and some difficulty with speech and swallowing. These symptoms disappeared within two weeks. Two weeks before admission she had an attack diagnosed as "grippe." Her menses began at the age of twelve and were exceedingly free, later being associated with bleeding from the nose. The last period commenced nine days before admission and continued with excessive nose-bleed and bleeding from the gums until admission. The positive features of the physical examination included a urinous odor to the breath, evidence of recent bleeding from the nose, the lips and the gums. Blood-pressure 148,132. Urine, 1008; alb. ft. tr.; many red blood cells and white blood cells. Red blood count, 2,270,000. White blood count, 5200. Hemoglobin, 50 per cent. Platelets, 220,800. Blood-urea nitrogen, 210 mg. per 100 cc. Blood plasma, CO_2 , 29 vols. per cent. Phenolsulphonaphthalein test, -0 in two hours. During the next three days the blood plasma, CO_2 , increased to 50 vols. per cent, but the blood-urea nitrogen rose to 228 mg. per 100 cc, and after a steady downward course she died four days after admission. Necropsy revealed early general arteriosclerosis; slight congestion and edema of the lungs; slight fibrosis of the spleen; submucous hemorrhages of the intestines; cloudy swelling of the liver; slight cardiac hypertrophy; aplasia of the left kidney and its ureter. The authors then give a detailed description of the gross and histopathological condition of the small right kidney: a combination of true chronic interstitial nephritis and chronic glomerulonephritis, showing also a remarkable degree of frustrated regeneration. They point out the striking similarity of their photographs to that used by Asehoff to illustrate "genuine" contracted kidney (true chronic interstitial nephritis). In the discussion the authors review the two types of nephritis which occur as complications of scarlatina, acute interstitial and acute glomerulonephritis, and point out the rarity of an opportunity to study the terminal stage of nephritis following scarlatina. They speak of the rarity of true chronic interstitial or glomerular nephritis before the age of twenty. The literature on true agenesis of the kidney is reviewed. The authors reach the tentative conclusion that this unusual picture was the result of the injurious action of scarlatina initiating a nephritis, which because of the inadequate and possibly anomalous kidney present, rapidly resulted in a condition analogous to chronic nephritis of adults.

Comparative Systolic Blood-pressure Readings in the Arm and Leg in Aortic Incompetence.—A careful study of 24 cases of aortic incompetence led WILLIAMSON (*British Med. Jour.*, May 21, 1921, p. 734) to doubt the generally accepted statement that a diagnostic sign of aortic insufficiency is the higher systolic arterial pressure in the leg compared to that in the arm when the patient is at rest and in the recumbent

position. The author found that though higher systolic readings in the leg than in the arm appear in the majority of cases of aortic incompetence, there is a large minority (25 per cent) in which they do not obtain. The difference in the readings is due, according to the author, not to aortic insufficiency but to commonly associated conditions of hypertonic contraction or hypertrophy of the muscular walls of the arteries with or without sclerotic changes. In any event the large majority of cases in which the arteries were thickened showed the difference, while in children in whom the arteries were not hypertrophied the phenomenon was relatively rare. The difference in pressures, therefore, is vascular, not cardiac in origin.

The Control of Hemorrhage by the Intramuscular Injection of Calcium Chloride.—Grove and Vines (*British Med. Jour.*, July 9, 1921, p. 40) recommend the intramuscular injection of calcium chloride for the treatment and prophylaxis of hemorrhage. The dose employed was 100 minims of a 1 per cent solution, and the injection was deep into the gluteal muscles. A subcutaneous injection is painful and is regularly followed by sloughing. It is not possible to state definitely the action of calcium salts in controlling bleeding. It is probable there is a direct constrictor effect on the bloodvessels, and, furthermore, the increased calcium content of the blood may promote combination between calcium and blood lipoids with a consequent acceleration of clotting. The dose may be repeated at the end of twenty-four hours and again a day later.

Further Report on the Treatment of Sleeping Sickness.—The treatment employed by Marshall and Vassallo (*British Med. Jour.*, May 28, 1921) is a combination of intravenous and intrathecal injections of organic arsenical preparations (neo-kharsican). The theory on which this therapy is based is that the trypanosomes having once reached the cerebrospinal canal were, after a certain time, immune to any medication via the blood stream. It is generally agreed that the intravenous injection of an organic arsenical sterilizes the blood stream in a short time. But a relapse soon occurs, probably because the focus of infections in the central nervous system is not acted upon by the drug in the blood. Hence a permanent cure can be effected only by sterilizing both the blood and lymphatic stream and the cerebrospinal cavity. While it may be early to state positively that the present treatment promotes definite cure, the authors feel optimistic in the face of the results obtained. Several of their cases have gone well beyond a year with one dose of treatment, and they have all invariably improved in health and no trypanosomes have been found in the blood or the spinal fluid, although they have been subjected to repeated and careful investigations.

Renal Irritation in Man from High Protein Diet.—Squier and Newbrough (*Arch. Int. Med.*, 1921, xxviii, 1) present the clinical histories and laboratory findings of 4 cases of hypertension in which urinary evidence of renal disturbance was slight or absent, before and after short periods of forced high protein-feeding. In each case the appearance of red blood corpuscles in the urine resulted, in 3 cases